



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-  
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\  
10.Broad St\_Gladstone Rd\Dock View Road Gyrotory\Holton Rd\_Dock View Rd.vai"  
(drive-on-the-left ) at 12:22:34 on Tuesday, 14 July 2009

.FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Holton Road / Dock View Road  
LOCATION:  
DATE: 14/07/09  
CLIENT:  
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]  
JOB NUMBER: 122374  
STATUS:  
DESCRIPTION:

.INPUT DATA  
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ARM A - Gladstone rndbt (W)  
ARM B - Holton Road (E)  
ARM C - Dock View Rd (S)

.GEOMETRIC DATA  
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I	ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I	
I	ARM	A	I	7.68	I	7.93	I	0.10	I	999.00	I	29.50	I	19.0	I	0.856	I	42.275	I
I	ARM	B	I	3.00 *	I	3.00	I	0.10	I	14.00	I	29.50	I	16.5	I	0.509	I	15.542	I
I	ARM	C	I	3.70	I	3.70	I	0.00	I	14.00	I	29.50	I	15.0	I	0.557	I	19.266	I

V = approach half-width              L = effective flare length              D = inscribed circle diameter  
E = entry width                          R = entry radius                          PHI = entry angle

\*\*WARNING\*\* ARM B - INPUT VALUE OF V ( 4.25) OUTSIDE ACCEPTABLE RANGE -  
HAS BEEN RESET AS INDICATED ABOVE (\*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA  
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Only sets included in the current run are shown

.SCALING FACTORS  
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T13

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

.TIME PERIOD BEGINS(16.15)AND ENDS(17.45)  
.LENGTH OF TIME PERIOD - ( 90) MINUTES  
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 with Development + Tourism  
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T15

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	RATE OF FLOW (VEH/MIN) BEFORE	I	AT TOP	I	AFTER	
I	ARM	A	I	15.00	I	45.00	I	75.00	I	4.68	I	7.01	I	4.68
I	ARM	B	I	15.00	I	45.00	I	75.00	I	8.63	I	12.94	I	8.63
I	ARM	C	I	15.00	I	45.00	I	75.00	I	5.93	I	8.89	I	5.93

DEMAND SET TITLE: PM 2020 with Development + Tourism

T33

TIME	FROM/TO	TURNING PROPORTIONS		
		ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	0.096	0.904
		0.0	36.0	338.0
		(0.0)	(0.0)	(1.0)
	ARM B	0.907	0.000	0.093
		626.0	0.0	64.0
		(4.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		474.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	4.69	41.90	0.112	-	0.0	0.1	1.9	-	0.027
ARM B	8.66	12.90	0.671	-	0.0	2.0	26.6	-	0.223
ARM C	5.95	14.79	0.402	-	0.0	0.7	9.6	-	0.112

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	5.60	41.90	0.134	-	0.1	0.2	2.3	-	0.028
ARM B	10.34	12.49	0.828	-	2.0	4.2	54.4	-	0.411
ARM C	7.10	13.91	0.510	-	0.7	1.0	14.7	-	0.146

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	6.86	41.90	0.164	-	0.2	0.2	2.9	-	0.029
ARM B	12.66	11.92	1.062	-	4.2	21.0	201.3	-	1.363
ARM C	8.70	13.20	0.659	-	1.0	1.9	25.9	-	0.217

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	6.86	41.90	0.164	-	0.2	0.2	2.9	-	0.029
ARM B	12.66	11.92	1.062	-	21.0	34.0	413.9	-	2.543
ARM C	8.70	13.07	0.666	-	1.9	1.9	28.6	-	0.228

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	5.60	41.90	0.134	-	0.2	0.2	2.3	-	0.028
ARM B	10.34	12.48	0.828	-	34.0	7.3	307.9	-	1.840
ARM C	7.10	12.90	0.550	-	1.9	1.3	19.8	-	0.175

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	4.69	41.90	0.112	-	0.2	0.1	1.9	-	0.027
ARM B	8.66	12.89	0.672	-	7.3	2.1	39.1	-	0.278
ARM C	5.95	14.54	0.409	-	1.3	0.7	10.9	-	0.117

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.2
17.00	0.2
17.15	0.2
17.30	0.2
17.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES
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IN QUEUE

16.30	2.0	**
16.45	4.2	****
17.00	21.0	*****
17.15	34.0	*****
17.30	7.3	*****
17.45	2.1	**

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.0	*
17.00	1.9	**
17.15	1.9	**
17.30	1.3	*
17.45	0.7	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

										T75
ARM	TOTAL DEMAND	* QUEUEING *		* INCLUSIVE QUEUEING *						
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)				
A	514.8	343.2	14.3	0.03	14.3	0.03				
B	949.7	633.2	1043.1	1.10	1043.3	1.10				
C	652.4	435.0	109.6	0.17	109.6	0.17				
ALL	2116.9	1411.3	1166.9	0.55	1167.1	0.55				

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB